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SOLUTIA

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October 27, 2000

Kevin Turner-Environmental Scientist, OSC
U. S. Environmental Protection Agency
8588 Rt. 148
Marion, IL 62959

Re: Sauget Sites Area I - May 31, 2000 Unilateral Administrative Order
Docket No. V-W-99-C-554
Dead Creek Sediments & Soils Removal / Containment

- **Time Critical Removal Action Work Plan**
- **Response to Comments - Part 1**

Mr. Turner,

On May 31, 2000 the United States Environmental Protection Agency ("U. S. EPA") issued a Unilateral Administrative Order ("Order") to Monsanto Company and Solutia Inc. ("Solutia") requiring removal of soils and sediments from Dead Creek and placement within a containment cell. On June 30, 2000 Solutia submitted for U. S. EPA's approval, a Time Critical Removal Action Work Plan ("TCRAWP") pursuant to the Order. On August 14, 2000, Solutia received your August 10th letter containing U. S. EPA's comments on the TCRAWP, along with additional comments from the Illinois Environmental Protection Agency ("IEPA"), except for Mr. Robert Watson; Illinois Department of Natural Resources ("IDNR"); and the U. S. Fish and Wildlife Service (U.S. F&WS"). Mr. Robert Watson's comments were received by Solutia via email on August 31, 2000.

Pursuant to agreements reached in an October 11, 2000 meeting of all parties to discuss the comments on the TCRAWP, enclosed is Solutia's Response to Comments - Part I. In the October 11 meeting, we agreed that the initial response to comments would be due on October 27, 2000 and would contain responses to all comments from your August 10 letter.

Response to Comments Part II will be submitted to the U. S. EPA by November 3, 2000, and will contain responses to an agreed-to subset of Mr. Watson's comments. This subset will include Solutia's "Group 1" responses and all of Mr. Watson's "musts" comments. Solutia's Group 1 responses addressed those comments from Mr. Watson which were agreed-to by Solutia with no further discussion. Mr. Watson's "musts" list of comments were communicated to Solutia at the October 11, 2000 meeting. All parties agreed that U. S. EPA approval of Response to Comments - Part II would provide sufficient certainty of the containment cell design to allow completion of a Request for Proposal ("RFP") by Solutia. The RFP will then be submitted to prospective construction contractors.

Response to Comments - Part III, to be submitted to U. S. EPA by December 29, 2000, will contain responses to all remaining comments from Mr. Watson not already addressed in Response to Comments - Parts I & II.

Pending timely U. S. EPA approval of the Response to Comments - Part II, the RFP is targeted to be issued to prequalified contractors by November 23, 2000. The contractors will be requested to return their bids within a one month period. The bids will then be reviewed by Solutia, a selection made and a contract awarded. Contract award is currently projected to occur in the late January / early February timeframe. The selected contractor would then be given approximately one month to be mobilized to the site.

Sincerely,

D. M. Light
Project Coordinator
Solutia Inc.

cc: (w/enclosure)

Thomas Martin, Esq. - U. S. EPA
Michael McAteer - U. S. EPA
Candy Morin - IEPA
Robert Watson - IEPA
Richard Nelson - U. S. F&WS
Steve Davis - IDNR
Linda Tape, Esq. - Thompson Coburn

cc: <u>(w/o enclosure)</u>
Bruce Yare - 6S
Mike Foresman - 6S

General Comment: The work plan needs to include a plan for the inclusion of a command post for the removal action. Solutia has previously mentioned the intention to move the current Area 1 command post from its location at Site R (Area 2) to an area on Judith Lane near the proposed containment cell location. U.S. EPA would like to make this location known to the public in advance of the removal action and encourage the public to visit the command post should they have questions or concerns about the removal action. A point of contact from Solutia should be named so that the public knows whom to contact with questions. A sign should also be posted outside the command post that provides contact telephone numbers of Solutia and U.S. EPA representatives.

Response: A command post will be constructed west of the Sauget Area 1 Investigation Derived Waste (IDW) Disposal Area which is located on the north side of Judith Lane west of Dead Creek. The command post will consist of two trailers on a gravel pad within a secure, fenced compound. A gravel parking area will be located outside the fence. USEPA will be allocated one office in the trailer complex. A sign containing the following information will be placed on the fence facing Judith Lane:

Sauget Area 1 Time Critical Removal Action
Command Post

Kevin Turner
On-Scene Coordinator
U.S. Environmental Protection Agency
Crab Orchard National Wildlife Refuge
8588 Rt. 148
Marion, Illinois 62959

618/997-0115

Michael Light
Project Coordinator
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This response will be incorporated verbatim in the Time Critical Removal Action Work Plan as Section 10.0 Command Post.

Specific Comments:

1. Section 3, Page 3-12, Subsection 3.5: For the sake of accuracy, it should be noted in the text that not only were PCBs "used by industries throughout the Sauget and Cahokia area" but, they were produced at Monsanto's Krummrich plant in Sauget.

Response: Section 3.5 (Page 3-12) will be revised as shown below and incorporated into the Work Plan:

> Only five metals, Barium, Copper, Lead, Nickel and Zinc, and one organic, PCB, were found throughout the Time Critical Removal Action Area at concentrations greater than 100 ppm and 1 ppm, respectively during sampling conducted by USEPA and IEPA (Table 1). Copper and zinc smelting are ongoing operations. **PCB production at Monsanto started in the 1930s and the manufacturing unit was dismantled in 1977.** PCB was widely used by industries throughout the Sauget and Cahokia area. Average Copper, Zinc, Barium, Lead, Nickel and PCB concentrations for SSP sediment samples are summarized below:

2. Section 4, Page 4-2, Subsection 4.2: The second to last paragraph in this subsection reads "Removal of sediment and soil will be terminated when 50,000 cubic yards are excavated and placed in the containment cell"...". This statement needs clarification. The amount of contaminated sediment and soil needing removal should dictate the termination of the excavation activity, not the capacity of the cell. The Unilateral Order requires the excavation of sediments based on a set of characterization criteria, from CS-B, CS-C, CS-D and CS-E. Anything less that this will not meet the requirements of the Order. Solutia may need to either strengthen the accuracy of their volume estimates and/or increase the size of the containment cell to account for a possible volume greater than 50,000 cubic yards.

Response: As designed, the containment cell has a capacity of 50,000 cubic yards. By increasing the slopes on the cap, cell capacity can be increased by 10,000 to 15,000 cubic yards. Additional capacity will be built if needed. Section 4.1, Removal Volume, will be revised as shown below:

> Creek Segment B and Site M contain an estimated volume of 25,500 cubic yards of metal and organic-containing sediment and soil. CS-C, D and E contain an estimated volume of 24,000 cubic yards of metal and organic containing sediment. The total estimated volume of metal and organic-containing sediment and soil to be removed as part of the Dead Creek Sediment and Soil Time Critical Removal Action is 49,500 cubic yards. An on-site containment cell with a volume of 50,000 cubic yards will be used to contain excavated sediment and soil from CS-B and Site M and sediment from CS-C, D, E and F. **If removal volumes exceed 50,000 cubic yards, cap slopes will be increased so that an**

> **additional 10,000 to 15,000 cubic yards of excavated material can be placed in the cell. If excavation volumes exceed the expanded capacity of the containment cell, additional cell capacity will be constructed.**

This revision will be incorporated verbatim into the Work Plan.

3. Section 4, Page 4-4, Subsection 4.3.2: The last sentence of this subsection requires further explanation. Why would an overflow structure be need to allow rainwater to discharge into CS-B?

Response: Site M is deeper than CS-B. Consequently, some type of overflow structure is needed to prevent erosion as water flows from CS-B into Site M when water levels in the latter are lower than in the former. Paragraph 2 of Section 4.3.2 will be revised as indicated below and incorporated into the Work Plan:

> **Site M is deeper than CS-B. In dry weather, the surface water elevation in Site M is often below the bottom of CS-B. During a storm, flow from CS-B into Site M could erode the channel connecting the two water bodies. Such erosion could result in sediment suspension and transport into Site M. To prevent erosion, rip rap will be installed in the channel between CS-B and Site M. Rip rap will also be installed on the wetted western side slope of Site M to prevent erosion as runoff from CS-B discharges into Site M.**

4. Section 4, Page 4-9, Subsection 4.3.5: The end point for excavation in CS-E is not very clear in this section. The southern end of CS-E is at Route 157. Also, the method for conducting the excavation within the parking lot for Parks College should be explained here. Dead Creek is subterranean at this point. The creek will need to be dug out. Will it be left open after the excavation?

Response: Excavation of Creek Segment E will terminate at Route 157. The culvert at route 157 will be cleaned out by jet washing as will the culvert beneath the Parks College parking lot. Paragraph 5, Section 4.3.5, Creek Segment E will be revised as shown below and incorporated verbatim into the Work Plan:

> **Sediment in the culvert on the east side of the Parks College parking lot will be removed by jet washing. Current plans call for jet washing from the**

south end to the center of the culvert and then from the north end to the center of the culvert. If this is not feasible, then the center of the culvert will be excavated to provide access for the jet washing equipment.

Sediment between the Parks College parking lot and the Route 157 culvert will be removed using a small tracked excavator. Sediment removal will terminate at the culvert. Small diameter trees are growing in the channel throughout this stretch of CS-E. These trees will be chipped and incorporated in the impacted sediment. Care will be taken to remove no more trees than are necessary to excavate sediments in a safe and responsible manner. Large trees are growing on the banks in this stretch of the creek. Branches hanging over the channel that might interfere with equipment operation will be chipped an incorporated in the impacted sediment.

Sediment will be removed from this section of CS-E using a small tracked excavator because it is not feasible to use large equipment. The channel is 10 to 20 feet wide here with trees on both banks and an apartment complex on the west bank. Sediment will be excavated, placed in a low-ground pressure dump truck and transported to a stockpile located within the creek bed just south of the Parks College parking lot. All of this work will be done within the exclusion zone. Stockpiled sediment will then be transferred to an over-the-road truck using a tracked excavator both working in the clean zone. Sediment removal will start at the south (downstream) end and move toward the north (upstream) end of this section of CS-E. Trucks will use Fallings Springs Road to get to Route 157 which connects to Route 3 (Mississippi Avenue), a four-lane highway, and will then go north to Judith Lane the local road that leads to the containment cell. Once in the cell, impacted sediments will be compacted so that they can support the weight of the overlying material and containment cell cap. A solidifying agent, meeting the requirements of IAC 724.414(e), will be used, if necessary, during compaction of the sediments in the containment cell to insure that compacted sediments pass the Paint Filter Test.

Also, discussions between U.S. EPA and Solutia regarding the sediment removal action included excavating the northern portion of CS-F up to the Terminal Railroad crossing near Cargill Road. The mutual agreement was that the residential areas in Cahokia warranted the sediment removal action. The area from Route 157 to the Terminal Railroad crossing is clearly within the residential area of Cahokia. The extent of this removal action needs to be further clarified.

Response: The following section will be added to Section 4.3 Sediment and Soil Removal:

Section 4.3.6 Creek Segment F - Sediment in the Route 157 culvert will be removed by jet washing from the north (upstream) end to the south (downstream) end of the culvert. Sediment in the stretch of Dead Creek between Route 157 and Route 3 will be removed by excavating with a Gradall or equivalent. Excavated sediment will be placed in an over-the-road dump truck and transported to the containment cell via Route 3 and Judith Lane. Both the Gradall and the dump truck will work in the clean. Sediment in the Route 3 culvert will be removed by jet washing from the north (upstream) end to the south (downstream) end of the culvert. Sediment in Dead Creek between Route 3 and old Route 3 will be removed with a Gradall or equivalent and transferred to an over-the-road dump truck. Both the Gradall and dump truck will work in the clean. Sediment in the old Route 3 culvert will be removed by jet washing from the north (upstream) to south (downstream) end of the culvert. Sediment in the channel between old Route 3 and Cargill Road and Cargill Road and the Terminal Railroad embankment will be removed with a Gradall, or equivalent, and transferred to an over-the road dump truck. Both pieces of equipment will work in the clean. Over-the road trucks working south of old Route 3 will use Cargill Road, Route 3 and Judith Lane to transport excavated sediment to the containment cell.

No trees are growing in the stretch of CS-F channel that will be excavated under the UAO. Large trees on the banks are far enough apart to allow working between them. Some overhanging branches may need to be removed from the stretch of channel between Route 3 and Cargill Road to provide working room for the excavator. However, this may not be necessary if work can be performed from the parking lot adjacent to the west bank of Dead Creek. Access was

> granted in 1999 by the property owner during removal of vegetation that was impeding stream flow in this stretch of Dead Creek. Access will be requested from the property owner so that sediment can be excavated by working from the parking lot.

5. Section 5, Page 5-1, Subsection 5.0: Please mention within this text that when the removal within a creek segment is completed the gravel and sand filter traps will be removed and placed into the constructed containment cell.

Response: Sediment traps will be removed during sediment excavation in each creek segment unless they need to remain in place to maintain the integrity of the storm-water management system. If this is the case, the sediment traps left in place will be removed when the sediment removal action is completed. If cell capacity is limited, gravel from the sediment traps will be washed to remove fine-grained materials and the washed gravel will be stockpiled for use on site. Fine-grained materials washed from the gravel will be dewatered and placed in the cell.

Filter dams need to remain in place until the sediment removal action is completed because these structures are an integral part of the storm-water management system. When sediment removal is completed in CS-B, C, D, E and F, all filter dams will be excavated and placed in the containment cell. The storm-water management system will then be dismantled. If cell capacity is limited, gravel from the filter dams will be washed to remove fine-grained materials and the washed gravel will be stockpiled for use on site. Fine-grained materials washed from the gravel will be dewatered and placed in the cell.

Section 5.0, Sediment Handling, Dewatering and Treatment Plan, will be revised by adding the following text after Paragraph 6:

> Sediment traps will be removed and placed in the containment cell when the sediment removal action is completed in each creek segment unless they need to remain in place to maintain the integrity of the storm-water management system. If this is the case, the sediment traps left in place will be removed when the sediment removal action is completed. If cell capacity is limited, gravel from the sediment traps will be washed to remove fine-grained materials and the

washed gravel will be stockpiled for use on site. Fine-grained materials washed from the gravel will be dewatered and placed in the cell.

When sediment removal is complete in all creek segments, filter dams will be removed and placed in the containment cell. Filter dams are an integral part of the storm-water diversion system for CS-B, C, D and E. For this reason, the filter dams need to stay in place until the sediment removal action is completed. If cell capacity is limited, gravel from the sediment traps will be washed to remove fine-grained materials and the washed gravel will be stockpiled for use on site. Fine-grained materials washed from the gravel will be dewatered and placed in the cell.

6. Section 6, Page 6-1, Subsection 6.0: The discussion regarding the use of earthen berms to divert storm water away from Site M needs to include a contingency for managing this diverted storm water so that it does not back up into the nearby homes on Walnut Street. It is in everyone's best interest to assure that the removal action does not cause any short-term adverse impact on the local residents. Storm water diversion management should also apply to all other creek segments.

Response: Paragraph 4 of Section 6.0, Storm Water Management Plan, will be modified as follows and incorporated into the Work Plan:

Site M will be hydraulically isolated from Dead Creek by closing the opening between Creek Segment B and the southwestern corner of Site M using compacted soil, sheet pile or other suitable method. Storm water inflows along the north, east and south sides of Site M will be diverted with earth berms and/or temporary drainage swales. **Runoff on the north side of Site M will be diverted to the east. It will be retained behind a berm installed in the fall of 1999 in response to a request from the mayor of Cahokia to reduce runoff onto the homes along Walnut Street. Only limited amounts of runoff are expected on the east and south sides of Site M. Elevations in this area are generally higher (El. 406 to 407 ft. msl) than most of the land to the east (El. 404 to 405 ft. msl). Consequently, runoff flows away from instead of toward Site M. Any runoff from this area will be handled using small drainage**

swales sloped to gravity drain. If gravity drainage is not possible, storm water will be pumped to CS-B.

A 12-inch, 5,000 gpm, float-activated, electric-powered sump pump will be installed in Site M to pump down accumulated water. Impounded water will be routed through a 12-inch diameter HDPE pipe to the gravel and sand filter dam constructed at the downstream end of CS-B and then will be discharged downstream.

In addition, the following paragraph will be added to the end of Section 6.0 Storm Water Management Plan:

Storm-water runoff discharging into Dead Creek from developed areas will be managed so that diversions installed to facilitate sediment drying and removal will not result in flooding.

7. Section 7, Page 7-1, Subsection 7.0: Please insert a sentence within the first paragraph that reads.... "The data results will be provided on-site and to the U.S. EPA as soon as the data have been provided from the laboratory performing the analysis."

Response: Paragraph 1 of Section 7.0 Excavated Area Soil Sampling Plan will be modified to read as follows and incorporated into the Work Plan:

Excavated area soil sampling will be performed after removal of sediments in Creek Segments B, D D and E and Site M. **Sampling** procedures and analytical methods approved by USEPA for the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan **will be used to collect and analyze these samples**. Specifically, sampling procedures in SSP Volume 2 Soil, Groundwater, Surface Water and Air FSP, QAPP and HASP and Laboratory Quality Assurance Plan will govern soil sample collection and analysis. **Analytical results will be provided on-site and to the USEPA as soon as the data are provided by the laboratory performing the analysis.**

8. Section 7, Page 7-2, Subsection 7.1: The final sentence of this subsection states: "Samples will be collected from 0 to 12 inches below the bottom of the excavated channel, TCLP extracted and the extract will be analyzed for TCL/TAL parameters and dioxins/furans." Please note that TCL/TAL should be analyzed on non-extracted sediment samples.

Response: Section V.3.B.4 of the Order, Work to be Performed - Excavated Area Soil Sampling, reads as follows:

> "After the sediment and soils removal has taken place, Respondents shall collect soil samples from, at a minimum, all excavated areas of CS-B, C, D and E at 100 ft. intervals.... Due to the fact that soils leaching to groundwater is the primary concern, bottom soil samples shall be extracted using TCLP and analyzed for Target Compound List/Target Analyte List (TCL/TAL) parameters and dioxin/furans."

To address the Agency's comment and the Order's requirement, 50 percent of the creek-bottom soil samples will be analyzed on a total concentration basis and 50 percent will be analyzed on a TCLP extraction basis. Splitting the analyses on a 50:50 basis will allow assessment of the risks associated with: 1) leaching of residual materials to groundwater and 2) human exposure to residual materials in creek bottom soils. A 50:50 split will be accomplished by collecting two TCLP extraction samples and one total concentration sample at the first samplingtransect. At the second sampling transect, two total concentration samples and one TCLP extraction sample will be collected. This alternation of transects will continue through the downstream end of the sediment removal area.

To incorporate this approach into the Work Plan, the last paragraph of Section 7.1, Creek Segments B, C, D and E, will be rewritten as follows and inserted in the Work Plan:

> Two samples will be collected from 0 to 12 inches below the bottom of the excavated channel at the first sampling transect, TCLP extracted and analyzed for TCL/TAL parameters and dioxin/furans. A third sample will be collected at this transect and analyzed for total TCL/TAL parameters and dioxin/furans.

At the second sampling transect, this sampling pattern will be reversed. Two samples will be collected from 0 to 12 inches below the bottom of the excavated channel and analyzed for total TCL/TAL parameters and dioxin/furans. A third sample will be collected, TCLP extracted and analyzed for TCL/TAL parameters and dioxin/furans.

This alternation of sampling transects will continue to the downstream end of the excavated channel.

To be consistent, the last paragraph of Section 7.2, Site M, will be revised and incorporated in the Work Plan as shown below:

Samples will be collected from 0 to 12 inches below the bottom of the excavated pond sediments in Site M. Fifty percent of the samples will be analyzed for total TCL/TAL parameters and dioxin/furans and fifty percent of the samples will be TCLP extracted and analyzed for TCL/TAL parameters and dioxin/furans.

9. Section 8, Page 8-1: As a reminder, Solutia should keep in mind the possibility exists that there may be a need to conduct further sediment/soil removal from Dead Creek during the later remedial action phase. The use of concrete mats during this removal action will possibly make this future work more difficult and expensive.

Response: Section V.3.B.5 of the Order, Work to be Performed - Excavated Bottom Liner Requirements, reads as follows:

After excavation and sampling, Respondents shall properly install and maintain a 40 mil, HDPE liner in CS-B of Dead Creek.

Installation of an HDPE liner necessitates installation of articulated concrete mat, rip rap or other suitable material to resist hydrostatic forces on the impermeable membrane. Keeping in mind that additional remedial action may be necessary after the sediment removal action, it would make sense to install the CS-B liner after channel bottom soil samples are analyzed and a risk assessment is completed. Channel bottom soil sample analytical data can be integrated into the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan Human Health Risk Assessment

(HHRA) to identify areas where additional action is needed to protect public health. Incorporating this analytical data into the HHRA should take approximately 60 days after receiving the analytical data from the laboratory if unvalidated data are used. If validated data are used, it should take 120 days after receipt of the analytical data update the risk assessment.

Since CS-B is, and will remain, fenced, there is no need to install the HDPE liner immediately after sediment excavation. If the Agency concurs, the HDPE liner will be installed in CS-B after incorporation of analytical results into the HHRA and evaluation of the need for additional protective measures. To accommodate this approach, the following paragraph will be added to the end of Section 8.0 Segment B Liner Installation:

> Since additional remedial measures may be necessary after sediment removal, the HDPE membrane in CS-B will be installed after the channel bottom soil samples are analyzed and a risk assessment is completed. Channel bottom soil sample analytical data will be integrated into the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan Human Health Risk Assessment (HHRA) to identify areas where additional remedial action may needed to protect human health. Incorporating this analytical data into the HHRA will take approximately 60 days after receiving the analytical data from the laboratory if unvalidated data are used. If validated data are used, it will take 120 days after receipt of the analytical data update the risk assessment.

10. Section 10: Duration for the sediment dewatering is incorrect (should be 8 months instead of 12). Also, consideration should be given to transferring all of the sediments to the cell as soon as construction is substantially complete. If there are final components of the cell construction that would not interfere with placing the sediments into the cell then the transfer activity could possibly start early. Also, the end date for the cap construction has a typo (Oct. 39).

Response: Bullets 2 and 9 of Section 10.0 Schedule will be revised as indicated below and included in the Work Plan. An additional note will be added to indicate that sediment transfer will begin as soon as the cell is substantially complete.

Work Element	Start	End	Duration

• Sediment Dewatering	Sep. 1, 2000	Apr. 30, 2000	**8 Months**
• Cap Construction	Sep. 1, 2001	Oct. **31**, 2000	2 Months

Notes:

1) **Sediment transfer will begin once cell construction is substantially complete, i.e. liner system installation is complete and all of the Agency's liner installation concerns are addressed.**
2) Freezing weather during cell construction may prevent activities such as foundation and berm construction and liner installation from being performed. If freezing weather occurs during soil compaction or liner installation, activities will need to be suspended until temperatures rise to the point where work can resume.
3) **CS-B will be lined after creek bottom soil sample results are integrated into the Human Health Risk Assessment and a decision is made on the need for additional remedial measures.**
4) Creek bottom soil sampling will be performed immediately after completion of sediment excavation in each creek segment.

11. Appendix 5: Please provide a detail drawing for the dewatering of Site M.

Response: Figure 7, Site M Detail, will be added to the Sediment Dewatering Design Drawings in Appendix 5 of the Work Plan. A copy of Figure 7 is included as Attachment 1 of this Response to Comments document.

12. Appendix 6, Plan and Profile Sheet 2: In light of several comments made by other agencies, would it be possible and/or practical to either widen the opening between Site M and Creek Segment B (CS-B) or permanently eliminate the peninsula which separates Site M from CS-B?

Response: To ensure that the storm-water detention capacity of Site M is effectively utilized, the opening between CS-B and Site M will be sized to accommodate a 100-year storm. This may require removal of a portion of the berm between Site M and Dead Creek. Soil excavated from the berm will be placed in excavated areas of Creek Segment B. Paragraph 2 of Section 4.3.2 will be revised as indicated below and incorporated into the Work Plan:

> **Site M is deeper than CS-B. In dry weather, the surface water elevation in Site M is often below the bottom of CS-B. During a storm, flow from CS-B into Site M could erode the channel connecting the two water bodies. Such erosion could result in sediment suspension and transport into Site M. To prevent erosion, rip rap will be installed in the channel between CS-B and Site M. Rip rap will also be installed on the wetted western side slope of Site M that receives runoff from CS-B.**
>
> **To ensure that the storm-water detention capacity of Site M is effectively utilized, the opening between CS-B and Site M will be sized to accommodate a 100-year storm. This may require removal of a portion of the berm between Site M and Dead Creek. Soil excavated from the berm will be placed in CS-B after sediment excavation.**

13. Appendix 6, New Dead Creek Channel Details, Sheet 3: Under the legend of the Typical Channel Section, there is a line called "clean fill". After excavation is complete, why would you bring clean fill into the creek bed before the articulated concrete mat is placed? Please explain.

Response: Creek bottom soils will be graded after sediment removal to produce a channel profile suitable for installation of an HDPE liner, geotextile and articulated concrete mat. In channel sections where there is not enough creek-bottom soil to do this, clean fill will be used to prepare a suitable profile. Clean fill will also be used to provide a suitable bedding layer for the HDPE membrane.

14. Appendix 7, Section 4, Page 4-3, Subsection 4.1.3: Please add a sentence to the text which states the depth the gas vents will penetrate the waste material.

Response: A sentence will be added at the end of Paragraph 2, Section 4.1.3 Load on Lining System and incorporated in the Work Plan as follows:

> The vent system will allow generated gas to exit the cell without pressure build up. **Gas vents will penetrate a minimum of 18 inches into the compacted sediments.**

15. Appendix 7, Section 4, Page 4-13, Subsection 4.5.3: Will any type of high water/leachate alarm be installed in the sump area: If not, how will Solutia check the leachate head level to determine when it is time to pump? Please elaborate within the text.

Response: Paragraph 3 of Section 4.5.3 will be rewritten as shown below and incorporated verbatim into the Work Plan:

> The HELP model results indicate that leachate production will be minimal after the cover system is in place. The transmissivity of the sand, gravel and geonet layers are adequate to rapidly transmit the leachate to the collection sump. **Leachate level in the sump will be monitored with a high level alarm. When high level conditions are detected, two actions will occur: 1) an alarm light visible from Judith Lane will be activated and 2) an auto-dialer will be activated to notify the operator of the high level condition.** Any liquids found in the collection piping will be removed at that time and placed in drums or tanks for disposal.

16. Appendix 7, Section 5, Page 5-5, Subsection 5.4.4: Where does the storm water flow after its has traveled down the paved downchute and into the stilling basin? It appears from the drawing Cover System Plan, Sheet C1.5 that nothing is contemplated. I think it is best to direct the surface water away from the containment cell and either into Segment B or a storm sewer as soon as possible. Please indicate within the text and if appropriate alter the drawing Cover System Plan, Sheet C1.5.

Response: Paragraph 3 of Section 5.4.4 Drainage and Erosion will be modified as follows and included in the Work Plan verbatim:

> The downchute and stilling basin are designed to handle 14 cfs peak flow. **A drainage swale will be constructed north of the containment cell to route storm water from the stilling basin to Creek Segment B which will be used to provide the storm water detention required by local and state regulations.** The stormwater calculations for the cover system are provided in Appendix D.

17. Appendix 7, Figure 4-8 and 4-9: Please add detail drawings for both the primary and secondary riser which shows a cross section of the sump and riser as the riser angles up the slope to the top of the containment cell.

Response: Drawings showing cross sections of the sump and riser as the riser angles up the slope of the containment cell will be prepared revised as indicated below and included in the Figures section of Appendix 7. These drawings are included as Attachment 3 of this response to comments document.

18. Appendix E: At the bottom of page 01010-4 the reference to the Pensacola Plant should be changed.

Response: The last paragraph on Page 01010-4 will be revised as follows and incorporated into the Work Plan:

> Contractor and all employees, subcontractors, supporting firms and incidental labor shall meet **Solutia's minimum safety requirements.**

General Comment: A groundwater monitoring program as required by Section V.3.B.6 of the referenced administrative order is not included in the draft work plan for review and comment. This is a significant deficiency and Solutia Inc should provide a draft program for immediate review in order to meet this project's expedited schedule.

Response: Section V.3.D, Operations and Maintenance Plan, of the May 31,2000 UAO requires submission of a groundwater monitoring plan 60 days after completion of cell construction:

> "Sixty days after the completion of the construction of the on-site Containment Cell, Respondents shall submit to EPA an Operation and Maintenance Plan for the Cell complying with the requirements set forth in 40 C.F.R. 761.75(b)(8) and 40 C.F.R. 264.303. ... Respondents' Containment Cell Operation and Maintenance Plan shall include Groundwater Monitoring and Corrective Action Program Plans for the cell that comply with the requirements of 35 IAC 724, Subpart F, and 40 C.F.R. Part 264, Subpart F."

Since excavated sediments will be transferred to the containment cell immediately after completion of its construction, there is a potential for groundwater to be impacted by leakage from the cell prior to installation of the groundwater monitoring system. While such an occurrence is highly unlikely given containment cell design (double synthetic liners, leachate and leak detection systems, GCL and capillary break layer), it would be prudent to install the groundwater monitoring system prior to sediment transfer. In addition, groundwater in this area is known to be impacted by migration from Sites H and I. Establishing baseline groundwater concentrations prior to sediment transfer is important for this reason also.

Therefore, a groundwater monitoring plan will be submitted for review and approval 60 days prior to start of cell construction.

Specific Comments:

Section 2.1, Page 2-5: In consideration of Solutia's familiarity with Monsanto's operations at the W.G. Krummrich Plant, the description of wastewater contaminants should be more specific and detailed.

Response: The list of constituents in Monsanto's waste water stream is the same list that was included in the Sauget Area 1 Support Sampling Plan which was approved by US EPA on

September 9, 1999. This was all of the information available at the time that document was prepared. No new information has become available since then. In addition to listing constituents present in waste water, the TCRAWP also listed products manufactured at the Krummrich plant. These products were:

Organics	Inorganics
Adipic Acid	Caustic Soda
Alkylbenzene	Chlorine
Benzyl Chloride	Muriatic Acid
Butyl Benzyl Chloride	Nitric Acid
Calcium Benzene Sulfonate	Phosphoric Acid
Chlorinated Cyanuric Acid	Phosphorous Trichloride
Chloroacetic Acid	Phosphorous Pentasulfide
Chlorobenzene	Potash
Chlorophenols	Sulfuric Acid
2,4-D	Zinc Chloride
Dichlorobenzenes	
Fatty Acid Chloride	
Nitroaniline	
Nitrochlorobenzene	
Nitrophenol	
4-Nitophenylamine	
Pentachlorophenol	
Phenol	
PCBs	
Potassium Phenyl Acetate	
Santoflex	
Santomerse	
Santolube 393	
2,4,5-T	
Tricresyl Phosphate	

This is a comprehensive list of organic and inorganic compounds associated with the Krummrich plant. Additional research to determine which of these compounds might have been present in plant waste water is likely to be futile given the long manufacturing history of this facility (operations started in 1907) and the paucity of records. In the 1999 Sauget Area 1 Support Sampling Plan, Solutia made its best effort to identify products manufactured at the Krummrich facility and present in its waste water. Information from this work plan was included in the Dead Creek Sediment and Soil Time Critical Removal Action Work Plan as background information. It is unclear how expending additional time and effort on historical background information will improve the Time Critical Removal Action Work Plan.

Section 2.7, Page 2-15: The statement is made that the Village of Cahokia prohibits the used of groundwater as a drinking water source; however, it is also stated that ten private wells are located within one mile of the proposed containment cell. Does the Village of Cahokia have an ordinance which prohibits groundwater use? How is the prohibition enforced regarding the existing private wells, even if the current use is reportedly for watering lawns. If the intent of these statements is to eliminate the human exposure to groundwater pathway, that should be stated.

Response: Section 2.7, Water Resources, of the Time Critical Removal Action Work Plan, provides background information on regional and local water use. Both the Village of Sauget and the Village of Cahokia are served by a municipal water supply obtained from the Mississippi River upstream of Dead Creek. Both villages also have groundwater use ordinances. Cahokia's ordinance is included in Attachment 4.

A Human Health Risk Assessment (HHRA) is being performed as part of the Sauget Area 1 Support Sampling Plan. Work on this risk assessment is currently underway and is scheduled for completion by January 9, 2001. Groundwater exposure through incidental ingestion (lawn watering, gardening) is part of this risk assessment. While a few residents in Cahokia have shallow wells, they are used for lawn and garden watering. None of these wellsare used as a primary drinking water source.

Section 3 SSP Sediment Bioassay Tables: Several results are noted in the tables with a "-"; explain in the table notations what the "-" represents. Those results should also be described in the text.

Response: "-" means "Not Tested". When acute toxicity was observed, chronic toxicity tests were typically not performed. Section 3 will be revised as shown below and included in the Work Plan:

3.0 Sediment Chemical Analyses and Bioassays

3.1 Creek Segment B and Site M

3.1.1 E&E Sediment Chemical Analyses - In 1998 Ecology and Environment, at the request of the USEPA, compiled all existing analytical data for Dead Creek (Volume 1, Sauget Area 1 Data Tables/Maps, February 1998). A variety of organic and inorganic constituents were found in CS-B and Site M sediments including 39 SVOCs, 20 Metals, 10 VOCs, and PCBs. Of the 39 SVOCs, 16 were PAHs, 4 were Phthalates, 6 were Chorobenzenes, 5 were Chlorophenols and 2 were Methylphenols. Maximum detected constituent concentrations for CS-B and Site M sediment and soil are given below:

VOCs (parts per million)	
Acetone	5
Benzene	<1
2-Butanone	14
Carbon Disulfide	<1
Chlorobenzene	13
Ethylbenzene	4
4-Methyl-2-Pentanone	<1
Tetrachloroethane	<1
Toluene	5
Xylene	<1

PCBs (parts per million)	
PCBs	17,000

Metals/Inorganics (parts per million)	
Antimony	45
Arsenic	306
Barium	17,300
Beryllium	3
Boron	76
Cadmium	400
Chromium	400
Metals/Inorganics (parts per million)	
Cobalt	100
Copper	44,800
Lead	24,000
Mercury	30
Nickel	3,500
Selenium	602
Silver	100
Strontium	430
Thallium	4
Tin	32
Vanadium	100
Zinc	71,000
Cyanide	4

SVOCs (parts per million)	
Acenapthene	3
Acenaphthylene	<1
Alkylbenzene	<1
Anthracene	4
Benzo(a)anthracene	9
Benzo(b)fluoranthene	30
Benzo(k)fluoranthene	15
Benzo(g,h,I)perylene	13
Benzo(a)pyrene	10
Bis(2-ethylhexyl)phthalate	18
Butylbenzylphthalate	2
Chrysene	12
Chloronitrobenzene	240
2-Chlorophenol	<1
Dibenzo(a,h)anthracene	4
Dibenzofuran	2
1,2-Dichlorobenzene	12,000
1,3-Dichlorobenzene	4
1,4-Dichlorobenzene	220
2,4-Dichlorophenol	<1
Di-n-butyl phthalate	<1
Di-ni-octyl phthalate	3
2,4-Dimethylphenol	<1
Fluoranthene	21
Fluorene	6
SVOCs (parts per million)	
Hexachlorobenzene	2
Indeno(1,2,3-cd)pyrene	9
Isophorone	<1
2-Methylnapthalene	8
4-Methylphenol	<1
Napthalene	10
4-Nitrophenol	3
Pentachlorophenol	2
Phenanthrene	15
Pyrene	27
1,2,4-Trichlorobenzene	3,700
1,2,4-Trichlorophenol	5
2,4,5-Trichlorophenol	<1

2,4,6-Trichlorophenol	<1

80% (8 of 10) of the VOC maximum concentrations are between <1 and 10 ppm and two (20%) are between 10 and 20 ppm. SVOC maximum concentrations are grouped as follows: 26 of 39 (67%) between <1 and 10 ppm, 6 of 39 (15%) between 11 and 20 ppm, 3 of 39 (8%) between 21 and 50 ppm and 4 of 39 (10%) greater than 100 ppm. Metals maximum concentration distributions are 5 of 20 (25%) between 1 and 50 ppm, 5 of 20 (25%) between 51 and 100 ppm, 5 of 20 (25%) between 101 and 1,000 ppm and 5 of 20 (25%) greater than 1000 ppm.

Using organic concentrations of greater than 100 ppm and metals concentrations of greater than 1,000 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCBs	17,000	5,200	9,706	108	<1
1,2-Dichlorobenzene	12,000	9,675	1,367	10	<1
1,2,4-Trichlorobenzene	3,700	1,679	342	11	<1
Chloronitrobenzene	240	236	203	201	170

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Inorganics (ppm)					
Zinc	71,000	53,350	14,126	5,047	30
Copper	44,800	36,050	11,186	2,890	27
Lead	24,000	2,795	1,313	319	6
Barium	17,300	8,578	2,400	1,089	41
Nickel	3,500	3,000	937	367	12

3.1.2 SSP Sediment Chemical Analyses - As required by the January 21, 1999 Administrative Order on Consent, signed by USEPA and Solutia Inc., an Engineering Evaluation Cost Assessment (EE/CA) for soil, sediment surface water and air and a Remedial Investigation/Feasibility Study (RI/FS) for groundwater are being conducted by Solutia. The data collection portion of this work, called the Support Sampling Plan (SSP), started in

September 1999 and finished in April 2000. As part of this work, a total of thirteen sediment samples were collected from Creek Segments B, C, D, E and Site M to determine the extent of site-specific constituent migration. Sediment samples were analyzed for Metals, Mercury, Cyanide, Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), PCBs, Pesticides, Herbicides and Dioxin. These analytical results were submitted to the Agency with the April 10, 2000 Monthly Report covering the period March 1 to 31, 2000. Analytical results for industry-specific constituents (copper, zinc and PCBs) plus two metals (barium and nickel) that are prevalent throughout the Dead Creek watershed are summarized below. All analytical results are included in Appendix 3.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-B	1	5,100	2,000	950	630	88	162.2
	2	11,000	7,900	3,800	1,000	500	226.1
	3	6,700	4,800	1,700	750	380	67.7
Site M	1	4,200	2,400	700	530	190	12.2

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-B						
• Maximum	11,000	7,900	3,300	1,000	500	226.1
• Average	7,600	4,900	1,988	793	323	152.0
• Minimum	5,100	2,000	950	630	88	67.7

3.1.3 SSP Sediment Bioassays - As part of the work required by the Sauget Area 1 Support Sampling Plan, sediment bioassays were performed on sediments collected from the same locations as the sediment samples collected for site-specific, broad-scan chemical analysis. Acute and chronic toxicity was observed for both amphipods (Hyallela) and midges (Chironomous) exposed to sediments from CS-B and Site M. The results of the sediment bioassays performed on CS-B and Site M sediments are summarized below. All bioassay results are included in Appendix 4.

Sample Location	Sample Number	Hyallela azteca Acute (% Survival)	Hyallela azteca Chronic (% Survival)	Chironomous tentans Acute (% Survival)	Chironomous tentans Chronic (% Survival)
CS-B	1	16*	8*	0*	Not Tested
	2	1*	Not Tested	0*	Not Tested
	3	64*	39*	100	52
Site M	1	10*	85	96	40

Note: * Statistically significant at p </= 0.05

3.2 Creek Segment C

3.2.1 E&E Sediment Chemical Analyses - A number of organic and inorganic constituents were found in CS-C sediments, however, there were fewer detected constituents than in CS-B. Detected constituents included 23 SVOCs, 15 Metals, 1 VOC, and PCBs. Of the 23 SVOCs, 16 were PAHs, 3 were Phthalates, 2 were Chorobenzenes and 1 was a Chlorophenol. No Methylphenols were detected. Maximum detected constituent concentrations for CS-C sediments reported in the 1998 Ecology and Environment report are given below:

VOCs (parts per million)	
4-Methyl-2-Pentanone	1.2

PCBs (parts per million)	
PCBs	23

Metals/Inorganics (parts per million)	
Barium	4,700
Beryllium	3
Boron	76
Cadmium	50
Chromium	68
Cobalt	32
Copper	17,200
Lead	1,300
Mercury	3
Nickel	2,300
Selenium	3
Silver	45

SVOCs (parts per million)	
Acenapthene	<1
Anthracene	<1
Benzo(a)anthracene	3.3
Benzo(b)fluoranthene	7.5
Benzo(k)fluoranthene	<1
Benzo(g,h,I)perylene	1.5
Benzo(a)pyrene	4.5
Bis(2-ethylhexyl)phthalate	<1
Butylbenzylphthalate	2
Chrysene	4.4
Dibenzo(a,h)anthracene	4
1,3-Dichlorobenzene	<1
1,4-Dichlorobenzene	<1
Di-ni-octyl phthalate	<1
Fluoranthene	4.6
Fluorene	<1
Indeno(1,2,3-cd)pyrene	4.3
2-Methylnapthalene	<1
Napthalene	<1
Phenanthrene	<1

Strontium	140	Phenol	<1
Vanadium	50	Pyrene	4.5
Zinc	21,000	1,2,4-Trichlorophenol	<1

Using organic concentrations of greater than 10 ppm and metals concentrations of greater than 100 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCBs	23	22	8	2	<1
Inorganics (ppm)					
Zinc	21,000	21,000	12,047	8,643	1370
Copper	17,200	17,200	8,328	5,042	580
Barium	4,700	4,700	2,176	1,418	376
Nickel	2,300	2,300	1,276	955	177
Lead	1,300	1,300	883	819	467

3.2.2 SSP Sediment Chemical Analyses - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-C sediments are summarized below. Average PCB concentration in CS-C is 50 times lower than the average PCB concentration in CS-B, 2.6 ppm versus 152 ppm. Average Copper concentrations in CS-C sediments (1900 ppm) is four times lower than the average concentration in CS-B (7600 ppm). Average Zinc and Lead concentrations are lower in CS-C than in CS-B (3567 vs. 4900 ppm and 360 vs. 793 ppm, respectively) while the average Nickel concentration is higher (500 vs. 323 ppm). Barium has an average concentration a factor of three lower than in CS-B (650 vs. 1998 ppm).

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-C	1	1,400	2,000	470	270	370	0.2
	2	2,200	4,500	680	330	580	2.9
	3	2,100	3,300	800	480	550	4.6

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-C						
• Maximum	2,200	4,500	800	480	580	4.6
• Average	1,900	3,567	650	360	500	2.6
• Minimum	1,400	2,900	470	270	370	0.2

3.2.3 SSP Sediment Bioassays - Sediment bioassays of CS-C sediments indicate that two of the three samples did not exhibit acute or chronic toxicity foramphipods. However, two of the three samples showed acute toxicity to midges. SSP bioassay results for CS-C are summarized below. All bioassay results are included in Appendix 4.

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-C	1	90	87	30*	**Not Tested**
	2	71	73	0*	**Not Tested**
	3	68*	76	96	63

Note: * Statistically significant at p </= 0.05

3.3 Creek Segment D

3.3.1 E&E Sediment Chemical Analyses - Organic and inorganic constituents found in CS-C sediments included 10 SVOCs, 10 Metals, 1 VOC, and PCBs. Of the 10 SVOCs,8 were PAHs and 2 were Phthalates. Chorobenzenes, Chlorophenols and Methylphenols were not detected. Maximum detected constituent concentrations for CS-D sediments reported in the 1998 Ecology and Environment report are given below:

VOCs (parts per million)		SVOCs (parts per million)	
4-Methyl-2-Pentanone	1.2	Benzo(b)fluoranthene	<1
		Benzo(a)pyrene	<1
		Bis(2-ethylhexyl)phthalate	<1
PCBs (parts per million)		**SVOCs (parts per million)**	

PCBs	1.2

Metals/Inorganics (parts per million)

Barium	622
Cadmium	42
Chromium	48
Cobalt	12
Copper	1,630
Lead	480
Mercury	1
Nickel	665
Vanadium	37
Zinc	6,590

Chrysene	<1
Dibenzo(a,h)anthracene	<1
Di-ni-butyl phthalate	<1
Di-ni-octyl phthalate	<1
Fluoranthene	<1
Indeno(1,2,3-cd)pyrene	<1
Pyrene	<1

Using organic concentrations of greater than 10 ppm and metals concentrations of greater than 100 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCB	12	11	7	7	2
Inorganics (ppm)					
Zinc	6,590	5,959	2,724	2,528	917
Copper	1,630	1,584	894	815	247
Nickel	665	646	403	397	174
Barium	622	565	319	328	199
Lead	480	454	245	220	44

3.3.2 SSP Sediment Chemical Analyses - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-D sediments are summarized below. Average PCB concentrations in CS-D are a factor of3 lower than average PCB concentrations in CS-C, 0.9 ppm versus 2.6 ppm. Average Zinc concentration in CS-D sediments (2333 ppm) is a factor of 0.65 lower than in CS-C. The average Copper concentration of CS-D sediments is a factor of three lower than in CS-C.

Barium, Lead and Nickel all have average concentrations that are about half the concentrations found in CS-C.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-D	1	740	2,500	380	260	260	0.7
	2	730	2,700	400	230	260	1.2
	3	320	1,800	310	170	150	0.7

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-D						
• Maximum	730	2,700	400	260	260	1.2
• Average	597	2,333	363	220	223	0.9
• Minimum	320	1,800	310	170	150	0.7

3.3.3 SSP Sediment Bioassays - Amphipod toxicity was not observed in any of the CS-D sediment bioassays while midge toxicity was observed in all of the CS-D bioassays. SSP bioassay results for CS-D are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-D	1	90	84	44*	**Not Tested**
	2	88	81	48*	**Not Tested**
	3	90	79	71*	42*

Note: * Statistically significant at p </= 0.05

3.4 Creek Segment E

3.4.1 E&E Sediment Chemical Analyses - Twelve metals were found in CS-E sediments. In addition to PCBs, six SVOCs and three VOCs were observed in CS-E. Of the six SVOCs, five were PAHs and one was a Chlorobenzene. No Phthalates, Chlorophenols or Methylphenols were detected. Maximum detected constituent concentrations for CS-E sediments reported in the 1998 Ecology and Environment report are given below:

VOCs (parts per million)		SVOCs (parts per million)	
Acetone	<1	Benzo(b)fluoranthene	2.4
Chlorobenzene	<1	Chrysene	2.8
Methylene Chloride	<1	1,4-Dichlorobenzene	1.5
PCBs (parts per million)		**SVOCs (parts per million)**	
PCBs	60	Fluoranthene	<1
		Phenanthrene	<1
Metals/Inorganics (parts per million)		Pyrene	5.3
Antimony	15		
Arsenic	30		
Barium	3690		
Cadmium	23		
Chromium	105		
Cobalt	13		
Copper	8,540		
Lead	1,270		
Mercury	2		
Nickel	2,130		
Vanadium	53		
Zinc	9,970		

Using organic concentrations of greater than 10 ppm and metals concentrations of greater than 100 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCB	60				60
Inorganics (ppm)					
Zinc	9,970	8,659	3,233	1,195	382
Copper	8,540	6,518	1,807	697	108
Barium	3,690	3,003	931	499	174
Nickel	2,130	1,671	486	186	45
Lead	1,270	1,021	408	315	140

3.4.2 SSP Sediment Chemical Analyses - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-D sediments are summarized below. Only one out of three samples in CS-E had a detectable PCB concentration and it was almost the same as the average concentration found in CS-D, 1 ppm versus 0.9 ppm. Zinc, Copper, Barium, Lead and Nickel all have average concentrations lower than those in CS-D.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-E	1	570	2,300	340	310	190	1.0
	2	350	1,800	290	190	130	BDL
	3	150	980	190	140	51	BDL

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-E						
• Maximum	570	2,300	340	310	190	1.0
• Average	357	1,693	273	213	124	-
• Minimum	150	980	190	140	51	BDL

3.4.3 SSP Sediment Bioassays - Amphipod toxicity was observed in two of the three CS-E sediment bioassays while midge toxicity was observed in all of the CS-D bioassays. SSP bioassay results for CS-E are summarized below:

Sample Location	Sample Number	Hyallela azteca Acute (% Survival)	Hyallela azteca Chronic (% Survival)	Chironomous tentans Acute (% Survival)	Chironomous tentans Chronic (% Survival)
CS-E	1	23*	56*	91*	54
	2	76	91	16*	**Not Tested**
	3	85	50*	97	0*

Note: * Statistically significant at p </= 0.05

3.5 Summary

Only five metals, barium, copper, lead, nickel and zinc, and one organic, PCB, were found throughout the Time Critical Removal Action area at concentrations higher than 100 ppm and 1 ppm, respectively, during sampling conducted by USEPA and IEPA (Table 1). Copper and zinc smelting are ongoing operations. PCB, production of which was discontinued in the 1970s, was widely used by industries throughout the Sauget and Cahokia area. Average Copper, Zinc, Barium, Lead, Nickel and PCB concentrations for SSP sediment samples are summarized below:

Constituent (ppm)	CS-B	Site M	CS-C	CS-D	CS-E
Metals					
Copper	7,600	4,200	1,900	597	357
Zinc	4,900	2,400	3,567	2,333	1,693
Barium	1,988	700	650	363	273
Lead	793	530	360	220	213
Nickel	323	190	500	223	124
Constituent (ppm)	**CS-B**	**Site M**	**CS-C**	**CS-D**	**CS-E**
Organics					
PCB	152.0	12.2	2.6	0.9	1.0

Sediment toxicity was observed in Creek Segment B and Site M and Creek Segments C, D and E (Appendix 4) which are all included in the Dead Creek Sediment and Soil Time Critical Removal Action UAO.

Section 3.5, Page 3-12: What is the significance of reporting average contaminant concentrations in the summary: Is it appropriate to report maximum contaminant concentrations instead?

Response: Maximum concentrations will be included in Section 3.5 as shown below and included verbatim in the Work Plan:

3.5 Summary

Only five metals, barium, copper, lead, nickel and zinc, and one organic, PCB, were found throughout the Time Critical Removal Action area at concentrations higher than 100 ppm and 1 ppm, respectively, during sampling conducted by USEPA and IEPA (Table 1). Copper and zinc smelting are ongoing operations. PCB, production of which was discontinued in the 1970s, was widely used by industries throughout the Sauget and Cahokia area.

Average Copper, Zinc, Barium, Lead, Nickel and PCB concentrations for SSP sediment samples are summarized below:

Constituent (ppm)	CS-B	Site M	CS-C	CS-D	CS-E
Metals					
Copper	7,600	4,200	1,900	597	357
Zinc	4,900	2,400	3,567	2,333	1,693
Barium	1,988	700	650	363	273
Lead	793	530	360	220	213
Nickel	323	190	500	223	124

Constituent (ppm)	CS-B	Site M	CS-C	CS-D	CS-E
Organics					
PCB	152.0	12.2	2.6	0.9	1.0

Maximum Copper, Zinc, Barium, Lead, Nickel and PCB concentrations for SSP sediment samples are summarized below:

Constituent (ppm)	CS-B	Site M	CS-C	CS-D	CS-E
Metals					
Copper	**10,000**	**4,200**	**2,200**	**730**	**570**
Zinc	**7,900**	**2,400**	**4,500**	**2,700**	**2,300**
Barium	**3,300**	**700**	**800**	**400**	**340**
Lead	**1,000**	**530**	**480**	**260**	**350**
Nickel	**500**	**190**	**580**	**260**	**190**

Constituent (ppm)	CS-B	Site M	CS-C	CS-D	CS-E
Organics					
PCB	226.1	12.2	4.6	1.2	1.0

Sediment toxicity was observed in Creek Segment B and Site M and Creek Segments C, D and E (Appendix 4) which are all included in the Dead Creek Sediment and Soil Time Critical Removal Action UAO.

Section 4.3, Pages 4-3 and 4-4: The issue of culvert size and replacement for all segments of Dead Creek should be thoroughly discussed relative to 1) the requirements for culvert replacement as described in the June 21, 1999 UAO; 2) the Village of Cahokia flooding study; 3) impacts to Dead Creek Segment F, focused on the Segment F wetlands; 4) the management of storm water and the potential for highway flooding at the junction of Routes 3 and 157.

Response: A number of the comments made by the IEPA, the U.S. Fish and Wildlife Service (USFWS) and the Illinois Department of Natural Resources (IDNR) concern the June 21, 1999 culvert replacement UAO. Concerns of these agencies focus on water level fluctuations in the CS-F wetlands due to culvert replacement and measures that could be taken to ameliorate the adverse effects of these fluctuations.

Culverts throughout the Dead Creek watershed are undersized, effectively turning each road crossing into a storm-water detention structure and each creek segment into a storm-water detention basin. It is unclear whether this was by design or by accident. For whatever reason, storm flows are effectively held back by each of the five road crossings between Queeny Avenue and Route 157 (Judith Lane, Cahokia Street, Kinder Street, Jerome Land and Edgar Street). Installing culverts designed to current standards would increase stream flow and eliminate storm water detention behind these road crossings. This would result in an adverse impact on the CS-F wetlands as more water moves downstream at a faster rate than is currently possible.

Solutia is not using Agency concerns about water level fluctuations to avoid implementing the June 21, 2000 UAO as stated in IDNR's and USFWS' comments. Solutia believes that replacing culverts to current design standards is a public works project and, therefore, is the responsibility of state and local government. Solutia's response to the June 21, 2000 UAO was three fold:

1) Hydraulic modeling of the watershed was performed to determine the effect of replacing all of the culverts on Dead Creek to current design standards. This modeling indicated that the potential for flooding would not be reduced if the culverts were replaced. Bank elevations in some portions of the creek would still be lower than the 100-year flood level even if water could flow freely from upstream to downstream. Even though culvert replacement would not prevent flooding in the watershed, Solutia proposed replacing culverts at Cargill Road and the Terminal Railroad embankment because this action would produce the greatest reduction in flood elevations. Replacement of the Cargill Road culverts is complete and work on the Terminal Railroad culverts is underway;

2) Initiation of a request for UAO modification to deal directly with the cause of the potential imminent threat cited in the June 21, 1999 UAO, i.e, the impacted sediments in Dead Creek. Rather than modifying the original UAO, the Agency issued a UAO on May 31, 2000 requiring Solutia to remove sediments from Creek Segments B, C, D and E and transfer them to an on-site containment cell. The Time Critical Removal Action Work Plan was submitted on June 30, 2000 as the first action required under the May 31, 2000 UAO. Command post construction started in October 2000 and installation of the sediment dewatering system will start in November 2000; and

3) Facilitation of studies and provision of assistance in obtaining public funding that would allow the Village of Cahokia to address the flooding and water management problems in the Dead Creek watershed. Public funding of $300,000 was obtained for the Village of Cahokia to perform a flood study of Dead Creek. The Village is in the process of completing the applications necessary for disbursement of these monies by the Illinois Department of Commerce and Community Affairs.

Under the May 31, 2000 UAO, Solutia is responsible for removing sediments from the Dead Creek channel and road culverts down to the Terminal Railroad embankment. Culverts in Creek Segments B, C, D, E and F will be cleaned out as required by the UAO. Since these culverts are deliberately blocked (Judith Lane) or are partially blocked by accumulated sediment (Cahokia Street, Kinder Street, Jerome Lane and Edgar Street), stream flow will increase somewhat once they are cleaned out. This is not likely to result in large fluctuations in water level in the downstream wetlands because all of these culverts are undersized and will act as flow restrictions. As long as the current culvert sizes are retained at all road crossings there is little potential for adverse water level fluctuations in CS-F wetlands water levels or for flooding at the culverts beneath Route 157 and Route 3.

Once sediments are removed from the stream channel and culverts, meander barriers and pool and riffle areas will be constructed in the channel. Native riparian vegetation will be planted on the disturbed stream banks and floodplain. These measures will increase storm-water retention time, slow water flow, reduce entrainment of sediments, decrease downstream water level fluctuation and reduce impacts to the wetland community.

A channel design will be submitted for Agency review and approval 60 days prior to start of sediment removal.

Specific Comments:

1. Section 4.3.2 Creek Segment B, Paragraph 3; Section 4.3.3 Creek Segment C, Paragraph 3; Section 4.3.4, Creek Segment D, Paragraph 6 and Section 4.3.5, Creek Segment E, Paragraph 6: For each creek segment the work plan states three reasons for not replacing the culverts or for replacing the existing culverts with ones of similar size:

1. The Village of Cahokia is planning to conduct a study of the cause of flooding in Dead Creek and to identify potential solutions.
2. Larger culverts will cause rapid fluctuations in the flood regime resulting in negative impact to the downstream wetland (Creek Segment F).
3. Larger culverts will move water down stream as a fast rate resulting in more flooding because of the capacity of the downstream culverts.

On June 21, 2000 the USEPA submitted a UAO to Solutia (Culvert UAO) regarding the replacement of existing culverts along Dead Creek with "... precast concrete culverts sized to convey water from one creek segment to the next without build up under flood conditions." I made my oral recommendation at the June 4, 2000 meeting with this action in mind. Therefore the first and third reasons for not replacing the existing culverts listed above are moot since Solutia has been ordered by the USEPA to replace "current culverts on Dead Creek". Secondly, my concern regarding the alteration of the hydrologic regime of the watershed and its possible effects on the wetland in Creek Segment F was meant to guide Solutia with respect to the development of their Time Critical Removal Action Work Plan since the Plan was to include a study of the 100-year flood elevations and flow design requirements for the culvert replacement project.

There are several available methods of altering storm water flow to prevent harmful effects to the environment. Some of these methods include a series of retention ponds, riffle-run-pool environments, and meandering of the stream channel. It has been shown that storm water systems that involve the passage of storm water through a series of ponds has significant environmental and economic advantages over the conventional engineered storm water management systems. Systems such as this provide habitat and enhance the area for local citizens. Several engineering companies specialize in this sort of work.

Response: A number of the comments made by the IEPA, the U.S. Fish and Wildlife Service (USFWS) and the Illinois Department of Natural Resources (IDNR) concern the June 21, 1999 culvert replacement UAO. Concerns of these agencies focus on water level fluctuations in the CS-F wetlands due to culvert replacement and measures that could be taken to ameliorate the adverse effects of these fluctuations.

Culverts throughout the Dead Creek watershed are undersized, effectively turning each road crossing into a storm-water detention structure and each creek segment into a storm-water detention basin. It is unclear whether this was by design or by accident. For whatever reason, storm flows are effectively held back by each of the five road crossings between Queeny

Avenue and Route 157 (Judith Lane, Cahokia Street, Kinder Street, Jerome Land and Edgar Street). Installing culverts designed to current standards would increase stream flow and eliminate storm water detention behind these road crossings. This would result in an adverse impact on the CS-F wetlands as more water moves downstream at a faster rate than is currently possible.

Solutia is not using Agency concerns about water level fluctuations to avoid implementing the June 21, 2000 UAO as stated in IDNR's and USFWS' comments. Solutia believes that replacing culverts to current design standards is a public works project and, therefore, is the responsibility of state and local government. Solutia's response to the June 21, 2000 UAO was three fold:

1) Hydraulic modeling of the watershed was performed to determine the effect of replacing all of the culverts on Dead Creek to current design standards. This modeling indicated that the potential for flooding would not be reduced if the culverts were replaced. Bank elevations in some portions of the creek would still be lower than the 100-year flood level even if water could flow freely from upstream to downstream. Even though culvert replacement would not prevent flooding in the watershed, Solutia proposed replacing culverts at Cargill Road and the Terminal Railroad embankment because this action would produce the greatest reduction in flood elevations. Replacement of the Cargill Road culverts is complete and work on the Terminal Railroad culverts is underway;

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Once sediments are removed from the stream channel and culverts, meander barriers and pool and riffle areas will be constructed in the channel. Native riparian vegetation will be planted on the disturbed stream banks and floodplain. These measures will increase storm-water retention time, slow water flow, reduce entrainment of sediments, decrease downstream water level fluctuation and reduce impacts to the wetland community.

A channel design will be submitted for Agency review and approval 60 days prior to start of sediment removal.

2. Areas undergoing soil/sediment excavation, particularly creek segments (either part or all) B, C, D, and E should be re-seeded with native vegetation. This would encourage the reappearance of existing habitat and hopefully discourage the growth of invasive species. IDNR staff could provide Solutia with guidance with regard to what plant species to use and monitoring of habitat establishment.

Response: See Response to Comment 1 above.

We agree that some trees and other existing habitat will be lost due to the proposed clean up effort. The removal of contaminants from the sediments will result in removal of a pathway of exposure to State natural resources. Therefore the loss of a few trees is accepted. However, if Solutia finds that a significant loss of trees (especially larger, older trees) will occur as a result of the remediation activities, IDNR would appreciate being consulted to determine alternative remedies.

Response: Solutia described the measures it would take to protect trees in the Time Critical Removal Action Work Plan. Small trees in the stream channel will need to be removed so that sediments can be excavated. Large trees on the stream banks will not be removed although overhanging branches that interfere with equipment operation will be trimmed. If there are specific trees that IDNR wants to protect, they should be identified in advance of sediment removal so that specific protective measures can be planned. Solutia is willing to work with IDNR to identify these trees and appropriate protective measures. Perhaps this could be done during the habitat assessment needed to prepare the Mitigation Plan.

Specific Comments:

1. Section 4.3.1, Page 4-3, Last Paragraph: This section states that large culverts will not be installed at this time. One reason stated for this decision is that pushing a large volume of storm water down Dead Creek will result in a rapidly fluctuating water level in the Creek Segment F wetlands, which will have an adverse effect on the wetlands. While this comment is true, several alternatives exist which would allow the replacement of the culverts as outlined in the June 1999 Dead Creek Culvert Replacement Project Unilateral Administrative Order and minimize injury to the Creek Segment F wetlands:

1. After installation of the HDPE liner, a series of barriers could be installed in the creek. This would create an artificial meander which would effectively increase the length of the stream and increase storm water retention time while providing increased drainage during rain events. Increased storm water retention time would mean a reduction in downstream water level fluctuations and reduce the impacts to the wetland community.

2. In various locations along the stream, install retention ponds. Retention ponds would receive waters and reduce the pulse of water associated with rain events. This would increase storm water retention time resulting in a reduction in downstream water level fluctuations and, therefore, a reduction in impact to the wetland community. Additionally, this alternative would provide a more natural stream habitat by simulating the riffle pool sequencing found in natural streams.

3. In combination with either of the above alternatives, replanting the stream banks and flood plain with native riparian vegetation would slow water flows and collect entrained sediments. The reduction in flow rate would increase storm water retention time in the affected creek segments, further reducing adverse impacts in Creek Segment F wetlands associated with rapidly fluctuating water levels.

4. Although this alternative is not desirable, the culverts could be replaced, and the wetlands could be replaced in kind within the watershed through a Natural Resource Damage Assessment and Restoration Project.

Response: A number of the comments made by the IEPA, the U.S. Fish and Wildlife Service (USFWS) and the Illinois Department of Natural Resources (IDNR) concern the June 21, 1999 culvert replacement UAO. Concerns of these agencies focus on water level fluctuations in the CS-F wetlands due to culvert replacement and measures that could be taken to ameliorate the adverse effects of these fluctuations.

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A channel design will be submitted for Agency review and approval 60 days prior to start of sediment removal.

2. Section 4.3.3, Page 4-5, Last Paragraph: See comments on Section 4.3.1, Page 4-3, Last Paragraph

Response: See Response to Comment 1 above.

2. Section 4.3.3, Page 4-5, Last Paragraph: See comments on Section 4.3.1, Page 4-3, Last Paragraph

Response: See Response to Comment 1 above.

3. Section 4.3.4, Page 4-7, Last Paragraph: See comments on Section 4.3.1, Page 4-3, Last Paragraph

Response: See Response to Comment 1 above.

4. Section 4.3.5, Page 4-10, Last Paragraph: See comments on Section 4.3.1, Page 4-3, Last Paragraph

Response: See Response to Comment 1 above.

5. Section 8.0, Page 8-1, Last Paragraph: This section states that the channel may be allowed to revegetate naturally through the use of open block articulated mats if hydrostatic forces allow.

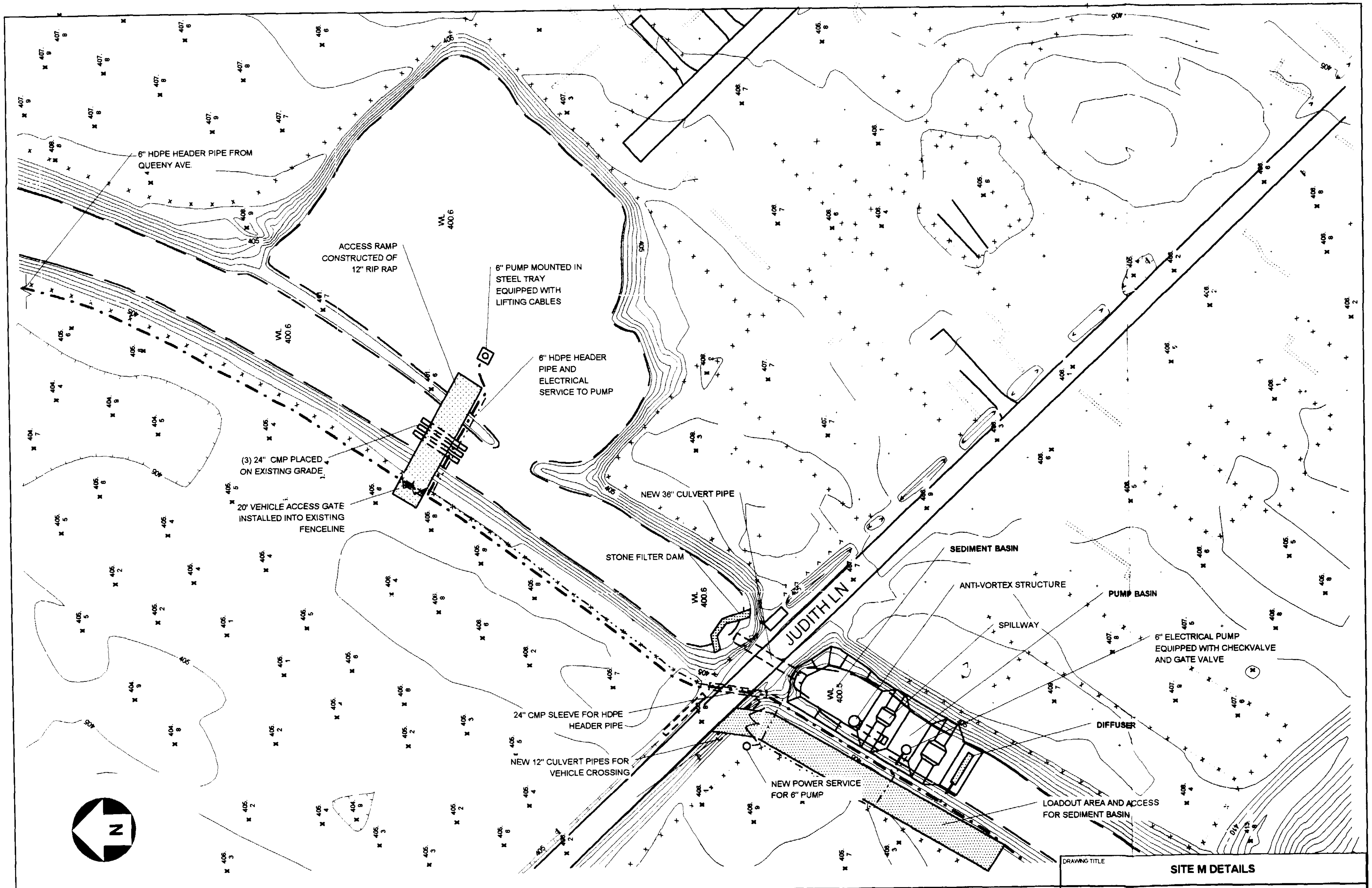
In addition to the channel revegetation, areas where bank vegetation has been disturbed should be planted with native riparian plants to stabilize the banks, filter stormwater surface runoff, and provide habitat for various bird species.

Response: See Response to Comment 1 above.

Attachment 1

Sediment Dewatering Design Drawings

Site M Detail



DRAWING TITLE

SITE M DETAILS

PROJECT TITLE

DEAD CREEK SEDIMENT AND SOIL TIME CRITICAL REMOVAL ACTION
SAUGET AREA 1, SAUGET AND CAHOKIA, ILLINOIS

PREPARED FOR

SOLUTIA

575 Maryville Centre Drive
St. Louis, Missouri 63141

PREPARED BY

MAVERICK
Construction Management Services, Inc.

15 CEDAR STREET
AUBURN, MA 01501
PHONE: (508) 721-2227
FAX: 508) 721-2229

DESIGNED BY JAF	DATE 10/18/00	DRAWING NO	7
DRAWN BY JAF	CAD FILE SHEET 1		
CHECKED BY TJ	PROJECT NO 00-001		
APPROVED BY JAF	SCALE NOT TO SCALE		

Attachment 2

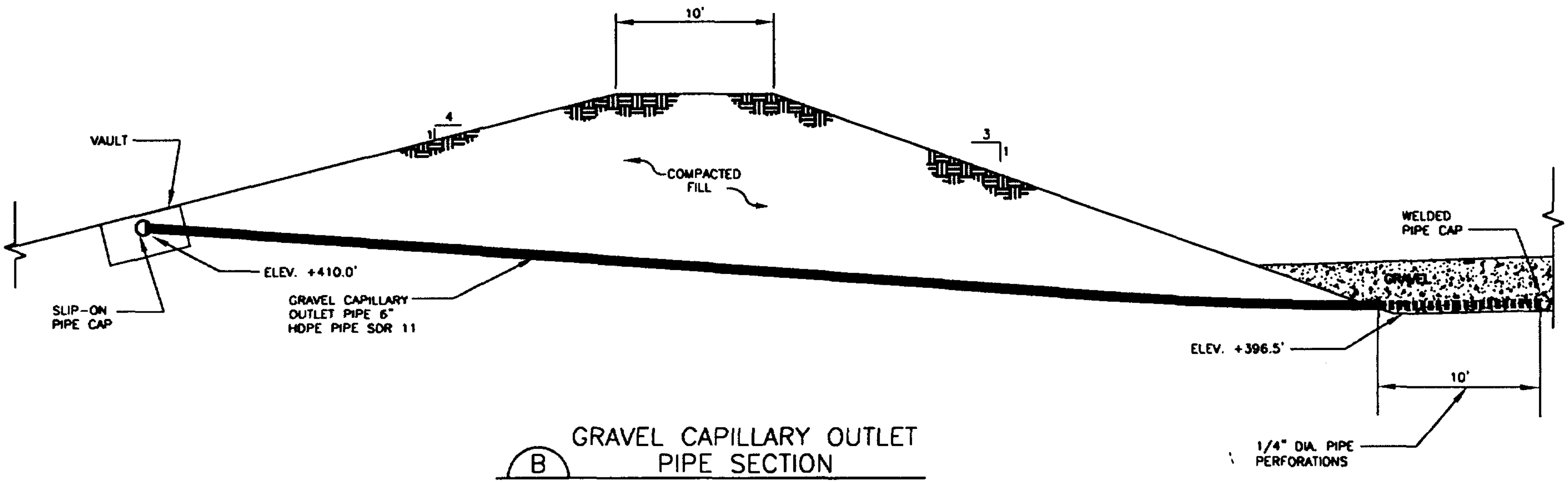
Containment Cell Design Drawings

Drawing C 1.5 Drainage Swale

Attachment 3

Containment Cell Design Drawings

Riser Pipe Details



B GRAVEL CAPILLARY OUTLET PIPE SECTION

NTS

SOLUTIA INC. SAUGET AREA 1 CAHOKIA, ILLINOIS	URS Greiner Woodward Clyde 7650 WEST COURTNEY CAMPBELL CSWY. TAMPA, FLORIDA 33607-1462 TEL: 813.286.1711 FAX: 813.287.8591	GRAVEL LAYER CAPILLARY OUTLET PIPE SECTION	PROJECT NUMBER C100004051.00
	SCALE NTS / DRAWN BY: CRH / DATE: 10/23/00 / CHECKED BY: / DATE:		FIGURE NUMBER B
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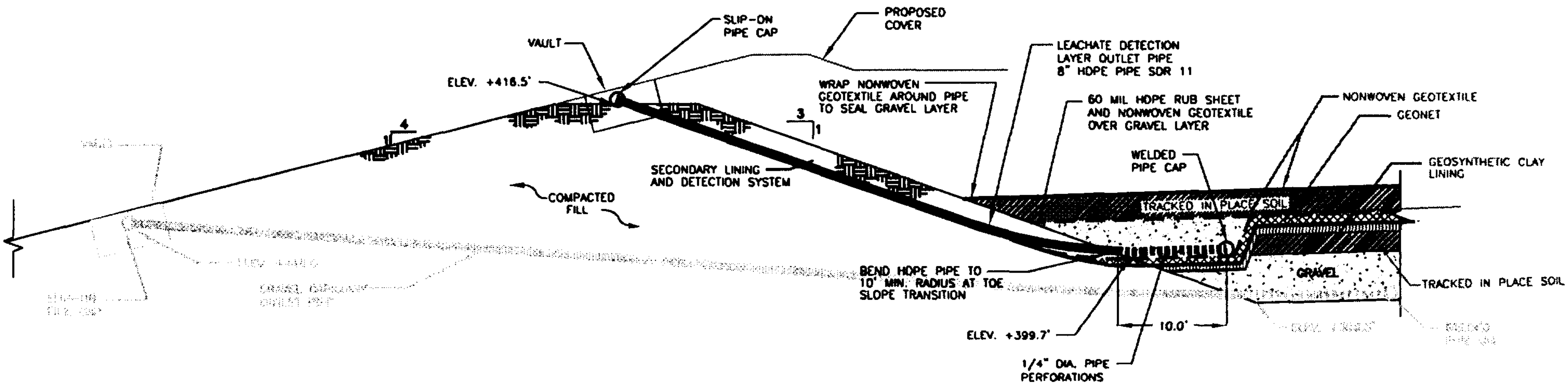

(B) LEACHATE DETECTION LAYER PIPE SECTION

NTS

SOLUTIA INC. SAUGET AREA 1 CAHOKIA, ILLINOIS	URS Greiner Woodward Clyde 7650 WEST COURTNEY CAMPBELL CSWY. TAMPA, FLORIDA 33607-1462 TEL: 813.286.1711 FAX: 813.287.8591		LEACHATE DETECTION LAYER OUTLET PIPE SECTION	PROJECT NUMBER C100004051.00
	SCALE NTS	DRAWN BY: CRH CHECKED BY:	DATE: 10/23/00 DATE:	FIGURE NUMBER C
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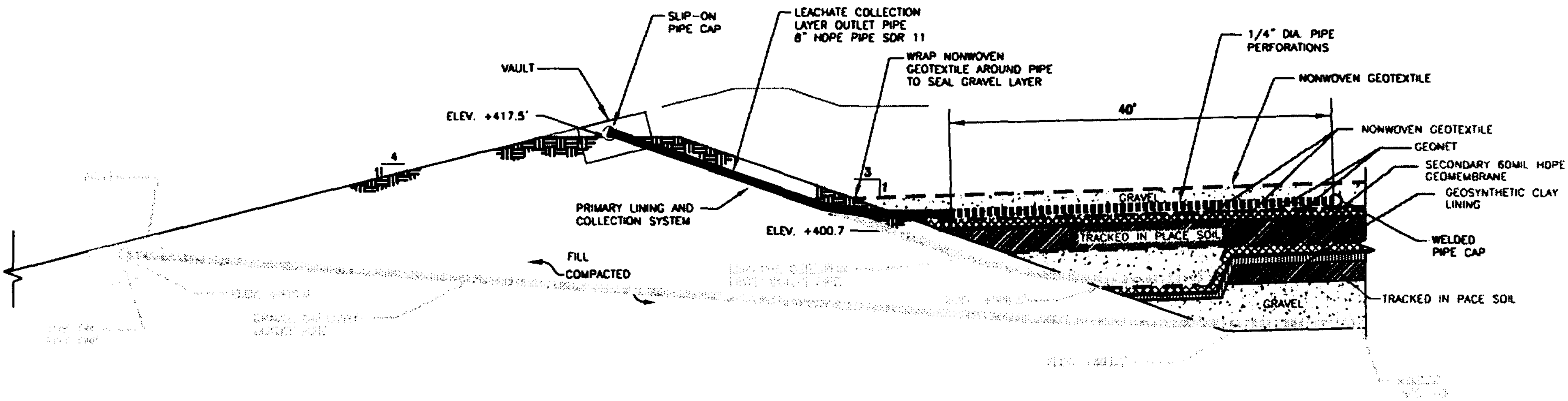
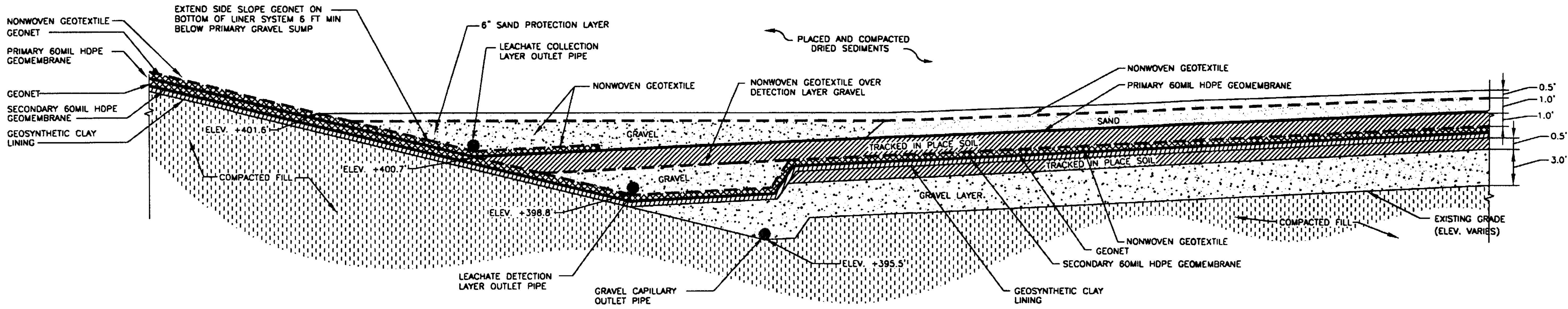


B

LEACHATE COLLECTION LAYER PIPE SECTION

NTS

SOUTIA INC. SAUGET AREA 1 CAHOKIA, ILLINOIS	URS Greiner Woodward Clyde 7650 WEST COURTNEY CAMPBELL CSWY. TAMPA, FLORIDA 33607-1462 TEL: 813.286.1711 FAX: 813.287.8591 SCALE: NTS | DRAWN BY: CRH | DATE: 10/23/00 CHECKED BY: | DATE: LINER DETAILS_MOD1.dwg - Layout 5	LEACHATE COLLECTION LAYER OUTLET PIPE SECTION	PROJECT NUMBER C100004051.00	FIGURE NUMBER D



A COLLECTION SUMP SECTION

NTS

REV	DESCRIPTION OF REVISION	BY	DATE
△			
△			
△			
△			
△			

SOLUTIA INC.
SAUGET AREA 1
CAHOKIA, ILLINOIS

URS Greiner Woodward Clyde
7650 WEST COURTNEY CAMPBELL CSWY.
TAMPA, FLORIDA 33607-1462
TEL: 813.286.1711 FAX: 813.287.8591

SCALE NTS	DRAWN BY: CRH	DATE: 10/23/00
	CHECKED BY:	

LINER DETAILS_MOD1.dwg – Layout 2

COLLECTION SUMP SECTION

PROJECT NUMBER C100004051.00

FIGURE NUMBER A

Attachment 4

Cahokia Groundwater Use Ordinance

ORDINACE No. 981

AN ORDINANCE PROHIBITING THE USE OF GROUNDWATER AS A POTABLE WATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER SUPPLY WELLS OR BY ANY OTHER METHOD

WHEREAS, certain properties in the Village of Cahokia, Illinois, have been used over a period of time for commercial/industrial uses; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the Village may exceed Class I groundwatet quality standards for potable resource groundwater, as set forth in 35 Administrative Code Part 620, or Tier 1 residential remediation objectives, as set forth in 35 Ill. Admin. Code Part 742; and

WHEREAS, the Village of Cahokia desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of properties that are the source of said chemical constituents;

NOW, THEREFORE, BE IT ORDAINED BY THE VILLAGE BOARD IN THE VILLAGE OF CAHOKIA, ILLINOIS:

Section One: Use of groundwater as a potable water supply prohibited.

The use or attempted use of groundwater from within the corporate limits of the Village as a potable water supply by the installation or drilling of wells or by any other method is hereby prohibited.

Section Two: Penalties.

Any person violating the provisions of this ordinance shall be subject to a fine of up to $1,000.00 for each violation.

Section Three: Definitions.

"Person" is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their representatives, agents or assigns.

"Potable water" is any water used for human or domestic consumption, including, but not limited to, water used for drinking, bathing, swimming, washing dishes, garden or lawn watering, or preparing foods..

Section Four: Repealer.

All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed insofar as they are in conflict with this ordinance.

Section Five: Severability.

If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section six: Effective Date.

This ordinance shall be in full force and effect from and after its passage, approval and publication, as required by law.

ADOPTED: 6-06-2000
(Date)

(Village Clerk)

ADOPTED: 6-06-2000
(Date)

(Mayor)

Officially published this 31st day of June, 2000.

SOLUTIA™

LETTER OF TRANSMITTAL

From: Bruce Yare
575 Maryville Centre Drive
St. Louis, MO 63141
(314) 674-4922 FAX (314) 674-8957

Mike McAteer
USEPA Region 5
77 West Jackson Blvd.
Chicago, IL 60604-3590

Date: 10/31/00

Sauget Area 1
Dead Creek Sediment & Soil Removal Action
Oct. 27, 2000 Response to Comments
Document

The following items are:

_X_ Enclosed ____Requested ____ Sent Separately Via:________________

No. of Copies	Description
1	Design Drawing C1.5 Cover System Plan

The above items are submitted:

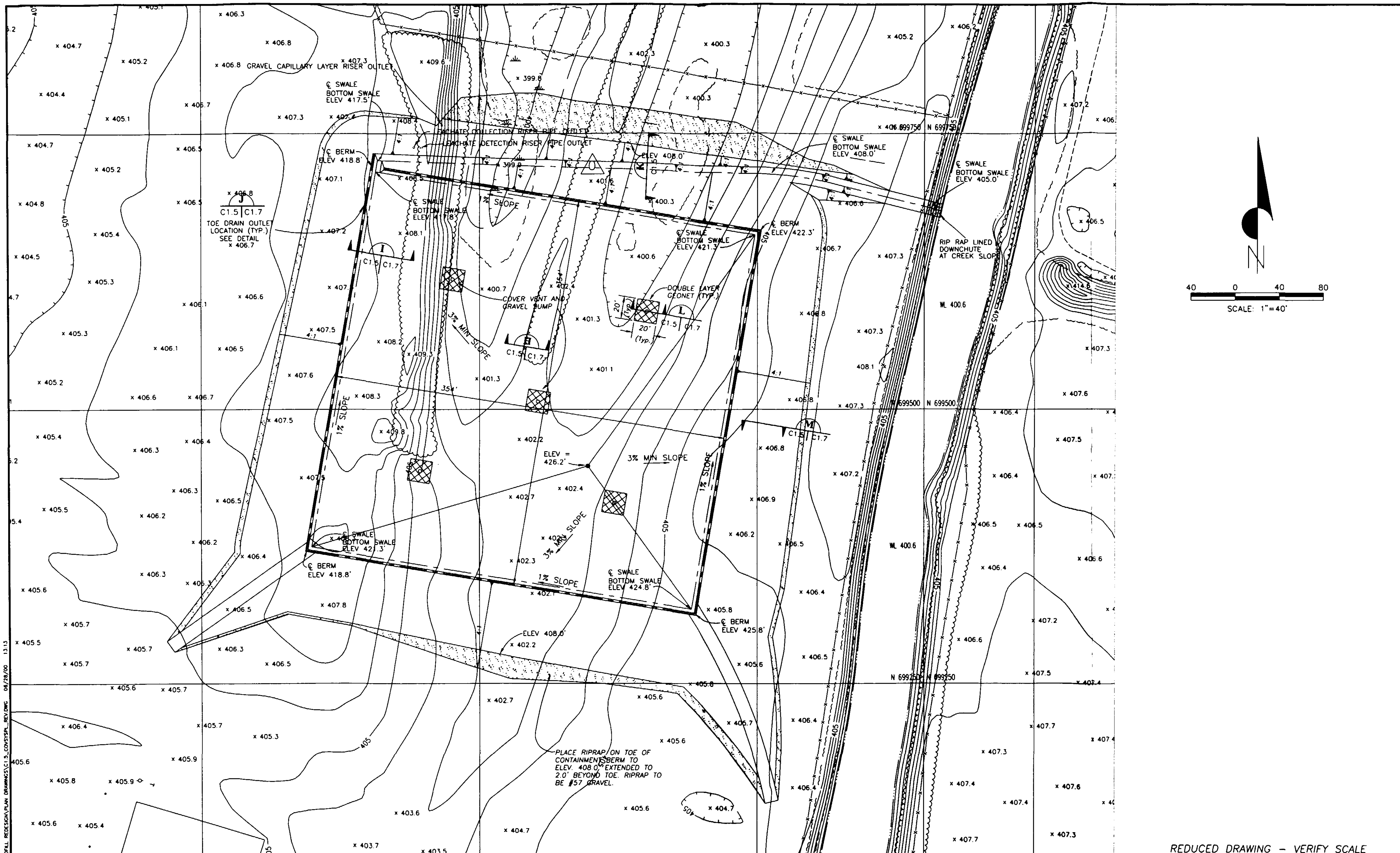
____ At your request ____ For your review ____ For your signature

____ For your files ____ For your action ____ For your information

Comments:

Please insert in Attachment 2 of R to C Document

By: Bruce Yare



REDUCED DRAWING – VERIFY SCALE

REV	DESCRIPTION OF REVISION	BY	DATE
1	RESPONSE TO EPA COMMENTS	MAB	10/23/00

DESIGNED BY: M. BRUNGARD
DRAWN BY: C. BRADFORD
CHECKED BY: G. WANTLAND
PROJECT MANAGER: G. WANTLAND
DATE: JUNE 28, 2000

URS Greiner Woodward Clyde
7650 WEST COURTNEY CAMPBELL CSWY.
TAMPA, FLORIDA 33607-1462
TEL: 813.286.1711 FAX: 813.287.8591

SOLUTIA INC.
SAUGET AREA 1
CAHOKIA, ILLINOIS

COVER SYSTEM PLAN

PROJECT NUMBER: C100003899.00
SHEET: C1.5